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THE AEROPLANE SPOTTER

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FOR THE ALERT
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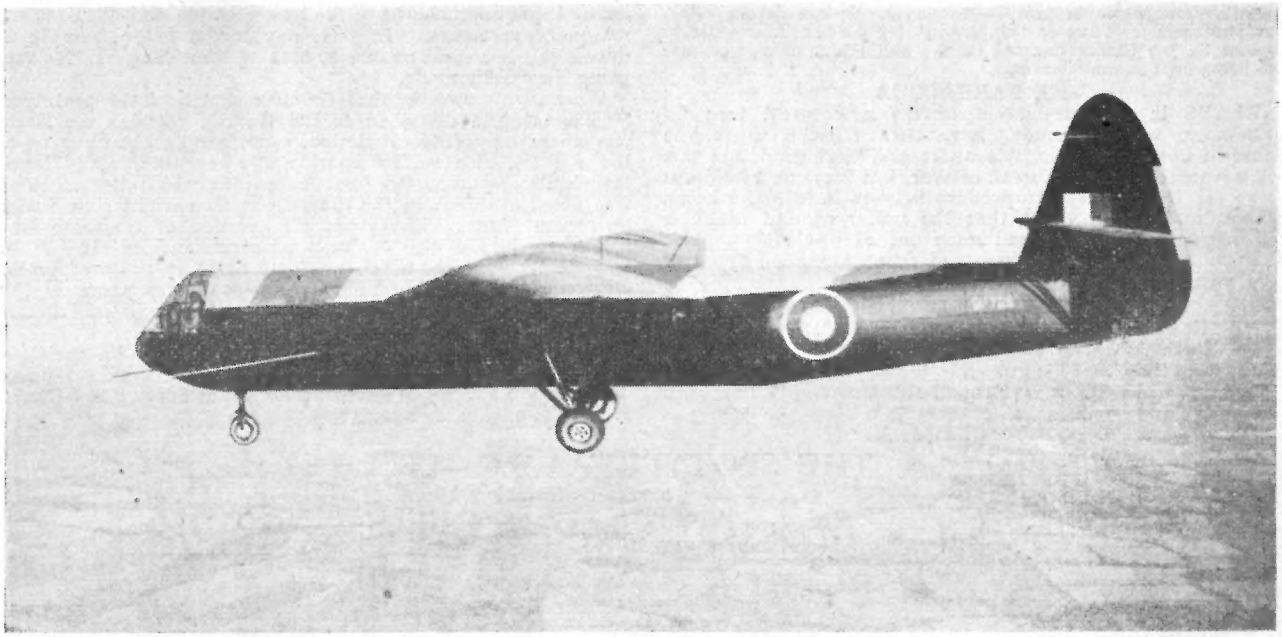


ANGLO-SAXON INVADER.—Airspeed Horsa gliders are now often seen in tow behind Armstrong Whitworth Whitley and other powered tugs. The Horsa has a long cylindrical fuselage with accommodation for a large number of airborne troops and their equipment. A tricycle undercarriage is fitted and the externally braced tailplane is mounted on the fin above the fuselage.

DURING the week in which the Royal Air Force has celebrated its Twenty-Fifth Birthday the Service has shown its versatility and hitting power as never before. The air offensive against Germany gains steadily in intensity and is now estimated to have reduced German aircraft production by some 30 per cent.—equivalent to a reduction in output from 3,000 to 2,100 aircraft per month. At the same time a new and effective tactical air weapon has played a major part in the success of the Eighth Army against the Mareth Line in Tunisia. The Hurricane "tank-buster" opens up new possibilities for air attack against armoured forces on land and sea under cover of air superiority.

Extraordinary advances have taken place in the air during the 25 years which have passed since the Royal Flying Corps and the Royal Naval Air Service amalgamated to become the Royal Air Force under Major-General Sir Hugh Trenchard, K.C.B., D.S.O. (now Marshal of the Royal Air Force Lord Trenchard of Wolfeton, G.C.B., G.C.V.O., D.S.O.) on April 1, 1918.

In 1918 the standard single-seat fighter of the new R.A.F. was the S.E.5a which had a top speed of 135 m.p.h. To-day the Supermarine Spitfire IX flies at more than 400 m.p.h. The most advanced day-bomber of 1918 was the D.H.9a. Its successor, the D.H. 98, the Mosquito, is in direct line of descent from the old "Nine-Ack," separated by a quarter of a century of time and 88 designs. Similarly the heavy bombers of 1918 have their counterparts to-day. The H.P.0/400 lives again in the H.P. Halifax, though single bombs have increased in weight from 1,650 lb. to 8,000 lb. and heavy bomber speeds from 80 to more than 250 m.p.h.

Two-seat fighters have tended to run in families also. The Bristol Fighter of 1917 has handed on its tradition to the Bristol Beaufighter in this War.

Such a list can be almost endless. Camel, Dolphin and Snipe fighters, Avro 504 night fighters, R.E.8 observation biplanes, Armstrong Whitworth reconnaissance biplanes, F.E.2B and H.P. V/1500 night bombers and F.5 flying boats are succeeded by Hurricanes and Typhoons, Defiants, Lancasters, Stirlings and Sunderlands.

Nor should we forget the intervening years when the uneasy peace between the wars was bridged by great aeroplanes such as the Gloster Gamecock, Armstrong Whitworth Siskin, Bristol Bulldog, Hawker Fury, Hawker Horsley, Fairey Fox, Hawker Hart, Handley Page Hinaidi and Heyford, Fairey IIIF, Supermarine Southampton and Blackburn Iris—to mention but a few. There were also the record breakers, the D.H.9, Vickers Vespa and Bristol 138A, all of which set up height records; the Hawker Horsley, the two Fairey Long-Range Monoplanes and the Vickers Wellesleys which gained new World's Distance Records; the Supermarine S.5, S.6 and S.6B with the Gloster-Napier VI which flew faster than any other aeroplanes of their day. These feats were made possible by the great engines of those years, the Napier Lion, the Rolls-Royce Eagle, Condor, Kestrel and Buzzard, the Bristol Jupiter, Mercury and Pegasus, the Armstrong Siddeley Jaguar, Panther, Leopard, Lynx and Cheetah and the de Havilland Gipsys.

The future looks bright, although only as a result of unremitting toil. The R.A.F. to-day has a moral, material and numerical ascendancy over the Luftwaffe which, with the United States and Allied Air Services, is being converted into air mastery over every fighting front. When, in 1968, the Golden Jubilee of the Royal Air Force comes to be celebrated what new glories will there be to add to the magnificent traditions of the past. There seems little doubt that the next 25 years will see greater developments than any since flying began, opening up new realms in the conquest of the air.

NEWS OF THE WEEK

THE BLASTER AND BATTLER

A DEVELOPMENT of the Buccaneer and Bermuda is now in production in the U.S.A. It is a single-motor bomber with a 1,600 h.p. Wright Cyclone 14 motor and has been named the Brewster Blaster.

A development of the Buffalo single-seat fighter for the U.S. Navy is designated the Brewster F3A-1 and named the Battler. The Brewster concern has been in trouble recently because its production has fallen much below schedule. Nor have its products shown themselves to be in the front rank. The Blaster and the Battler may recover lost laurels.

ITALIAN AIRCRAFT

PIAGGIO P.108 four-motor bombers now form the equipment of the "Bruno Mussolini" long-range Bomber Group of the Regia Aeronautica, which claims to have made raids on Gibraltar. A new Piaggio type, the P.111, is now being tested for high-flying pressure-cabin operations.

The Cant Z.506B Airone tri-motor twin-float seaplane is being used as an air ambulance in the Mediterranean. It can accommodate four stretchers and five seated patients for Air-Sea Rescue work. Caproni Ca 309 Ghibli, Caproni Ca 133 and S.M.81 aeroplanes are also being used as ambulances.

THE BARRACUDA

DELAYS in the production of the new naval torpedo-bomber, the Barracuda, have been referred to in the House of Commons. Mr. Alexander said that its design was well advanced at the outbreak of War, but inevitable hold-ups were: (1) the necessity to produce fighters in 1940 for home defence, and (2) the fact that the motor around which it was originally projected had gone out of production. He also mentioned the development of new unspecified types of naval aircraft.

NORTH AMERICAN DIVE BOMBER

THE NORTH AMERICAN AVIATION INC. have modified the North American 73 for use as a dive bomber. In its fighter form the N.A.73 is known in the Royal Air Force as the "Mustang." In its new form the "Mustang" has both dive-brakes and bomb racks.

GUIDE TO FLYING

COPIES OF "Guide to Flying" are now available. This book, prepared by a member of the staff of THE AEROPLANE, has been written for those who know nothing of the technicalities of the aeroplane or its management in the air, and is intended to serve as an introduction to these wide and somewhat complex subjects. A review of the book will appear in a later issue. The price is 10s. 6d., postage 4d. extra.

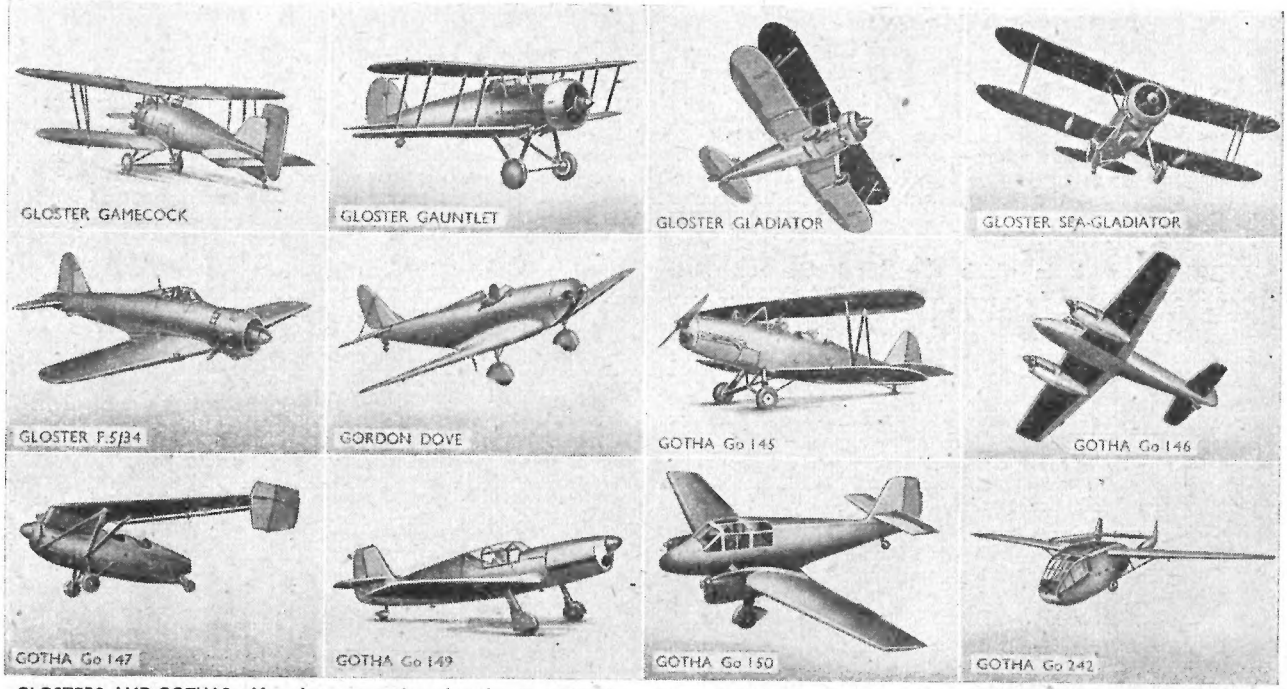
SCALE DRAWINGS OF HISTORICAL AEROPLANES

A NEW ISSUE OF the excellent series of scale drawings of the Great War types of aeroplanes is announced by the Aeromodeller Plans Service of Leicester. As the 25th anniversary of the foundation of the Royal Air Force has just been celebrated these drawings are topical. More than 60 different types are included in the new selection and all plans are reasonably accurate. In fact, any model made from these drawings has a good chance of looking something like the real thing if carefully made.

We notice, however, that the nose sketch of the prototype B.E.2c is again described as the B.E.2b, whereas the latter was an entirely different design. Another Farnborough type, the F.E.2d, also suffers considerably as the Rolls-Royce 12-cylinder liquid-cooled Vee motor with which this machine was fitted is shown in the drawing as an upright six-cylinder air-cooled motor. The production version of this aeroplane had a steel tube oleo "Vee" undercarriage instead of the tricycle type shown, which was only fitted to the prototypes. Otherwise we can thoroughly recommend this series to the enthusiast or searcher for historical background in Aircraft Recognition.

For the ordinary size of drawing the price is 3d. each (or 2s. 3d. doz.). The double-page drawings are twice the price. The London address of Aeromodeller Plans Service is Wilmary House, Highgate, London, N.6.

THE SPOTTERS' A.B.C.—LI



GLOSTERS AND GOTHAS.—Many famous aeroplanes have been produced by Gloster Aircraft Ltd. since it took over the British Nieuport designs in 1921. In this War four types have seen action. The **Gamecock** is a development of the Grebe and saw service for many years in the R.A.F. up to about 1927. In the Finnish Air Force Gamecocks have been in action in the War against the Russians. The top speed (450 h.p. Bristol Jupiter) is 155 m.p.h. The **Gauntlet**, like the Gamecock and the Gladiator and the Gloster Schneider racers, was designed by Mr. H. P. Folland, who was largely responsible for the S.E.5 of the Great War. The Gauntlet—a two-bay biplane—revived the radial motor fighter with the introduction of the Townend ring low-drag cowling. No. 19 Squadron, later the first to be equipped with Spitfires, was the first to receive Gauntlets in 1933 and shortly after won the Sassoon Cup for flight attack. Gauntlets saw action in the Northern Isles early in this War and scored several victories. The top speed (Bristol Mercury) is 235 m.p.h. The **Gladiator** is a single-bay biplane developed from the Gauntlet and with the 840 h.p. Mercury has a top speed of 245 m.p.h. with full war load. It has fought on many fronts in this War and is still used for meteorological flights. Gladiators were supplied to the Air Forces of Belgium, Sweden, Norway, Portugal, Iraq, Lithuania, Latvia, Southern Ireland, amongst others. The **Sea Gladiator** has a deck-arrester hook for use from carriers, floatation gear and long-range tank under the fuselage. [612 The **F.5/34** was an experimental low-wing monoplane, only two of which were built. With a Mercury IX motor the top speed was 315 m.p.h. Armament: eight machine-guns. The **Gordon Dove** was an experimental light single-seater which had a top speed of 95 m.p.h. on a 28 h.p. Aero-Engines 2-cylinder "Sprite" motor. It first flew in March, 1937. The German Gotha Company, well known for its bombers in the Great War, re-entered the German aircraft industry in 1934. The **Go 145** is a two-seat trainer much used by the Luftwaffe. Maximum speed 136 m.p.h. (240 h.p. Argus). The **Go 146** is a five-seat two-motor communications monoplane in the Q.6 class. Top speed 208 m.p.h. (two 200 h.p. Hirths). The **Go 147** is an experimental tailless monoplane with a span of 45 ft. and rudders at the wing tips. The **Go 149** is a single-seat military trainer. Maximum speed 248 m.p.h. (270 h.p. Argus). The **Go 150** is a two-seat two-motor light monoplane. Maximum speed 124 m.p.h. (two 50 h.p. Zundapp motors). The **Go 242** is a 25-seat troop and freight carrying glider. It can carry up to two tons of load. Some versions have four machine-guns to fire forward. Light cars can be driven in at the rear of the body which hinges up between the booms.

AIRCRAFT IN THE NEWS—LXXXI

THE DE HAVILLAND MOSQUITO II

DE HAVILLAND MOSQUITO II (two Rolls-Royce Merlin 21 motors) intruder fighters are operating with the Royal Air Force from Malta. Others are serving with Fighter Command and Coastal Command, particularly for long-range operations such as those reported over the Bay of Biscay.

Construction of the Mosquito is all wood and follows closely that of the de Havilland Comet which won the MacRobertson race to Australia in 1934. Improvements to the form of construction used in the Comet were embodied in the D.H. Albatross four-motor civil transport of 1937, which also served the purpose of a flying test bed for the form of construction used in the Mosquito. This method of all-wood monocoque construction is immensely strong, although very light, and allows designers to approach the perfection of streamlined form without losing the other two qualities.

The high speed of the D.H. 98, which is the works' number of the Mosquito, approaches that of contemporary single-seat fighters. This is attained through the highly streamlined form of the aeroplane and through the low drag afforded by the radiators, which are built into the leading edge of the wing between the motors and the fuselage.

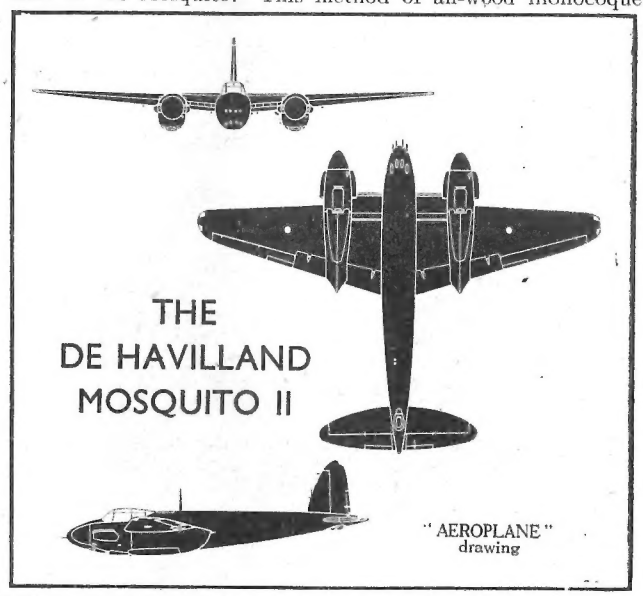
Instead of having a glazed nose similar to that of the Mosquito IV, the Mosquito II has a "solid" nose in which are mounted four .303-in. machine-guns. Four 20 mm. cannon are mounted in the floor of the fuselage, after the method used for mounting the cannon in the Bristol Beaufighter.

The Mosquito I was designed as a high-speed light day bomber and a small number went into service. They were used for the most part for day reconnaissance over Western Europe, but the majority are now used as operational trainers to prepare air crews for operations on the later Marks. The Mosquito IV is already well known as a high-speed day bomber.

The following details are for the Mosquito II:—

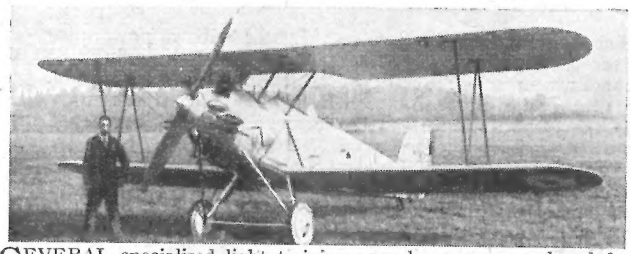
DIMENSIONS.—Span, 54 ft. 2 in.; length, 41 ft. 2 in.; height, 17 ft. 3 in.

POINTS OF RECOGNITION.—Two-motor mid-wing monoplane with large, underslung in-line motors, short nose, wide raised cabin enclosure, and tall single fin and rudder.



CIVIL IDENTIFICATION—LXXXI

THE HAWKER TOMTIT



SEVERAL specialised light training aeroplanes were produced for the Royal Air Force some years ago. In this class were the Avro Tutor and the D.H. Tiger Moth. Among these specially designed aeroplanes was the Hawker Tomtit as produced in 1929 with a 130 h.p. Armstrong Siddeley Mongoose motor. The Tomtit was intended to reproduce on a smaller scale all the flying characteristics of the current day bombers in use at that time, especially those of the bigger relation of the Tomtit, the Hawker Hart.

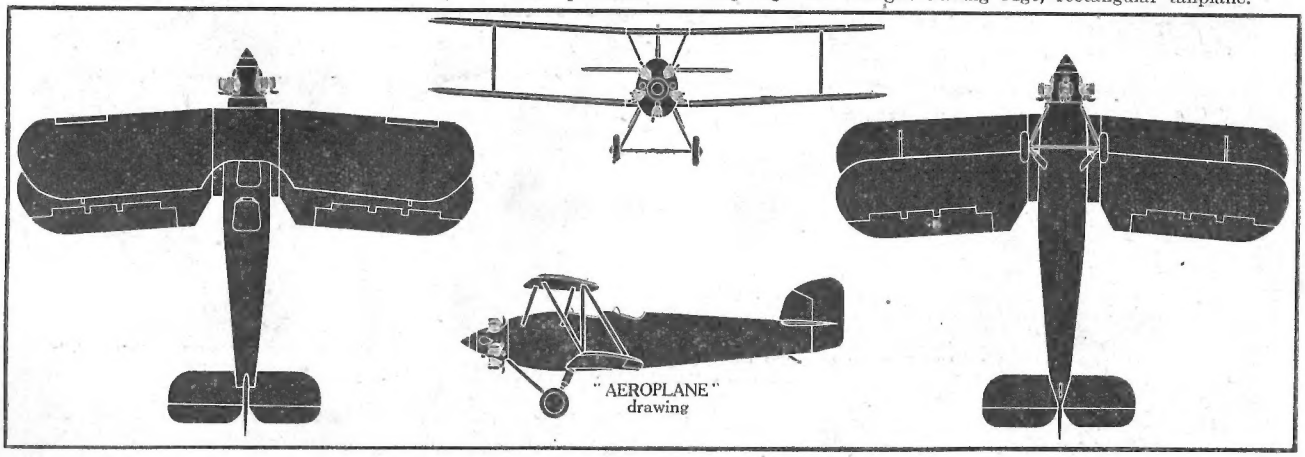
The Hawker Tomtit had all the qualities of a touring machine of high performance, was extremely manœuvrable and easy to fly, and could perform any evolution possible by the more powerful fighting aircraft of its day. It was fitted with dual control in two tandem cockpits. One machine was fitted with the Cirrus-Hermes in-line air-cooled motor, and three other machines of this type were used as flying test beds for the Wolseley seven-cylinder 185 h.p. A.R.9 motor. The Wolseley firm had revived their interest in aero motors under the direction of Lord Nuffield after he had taken over the company. All three Wolseley Tomtits took part in the King's Cup of 1934. One entered the final round and finished the whole race at an average speed of 136.46 m.p.h. The small batch built for Service training was powered with the Mongoose and at least one of these is still flying—as a hack machine for a well-known test pilot, Alex Henshaw. It has caused a little trouble in recognition, but has certain outstanding features which should distinguish it from other light aeroplanes of a similar type.

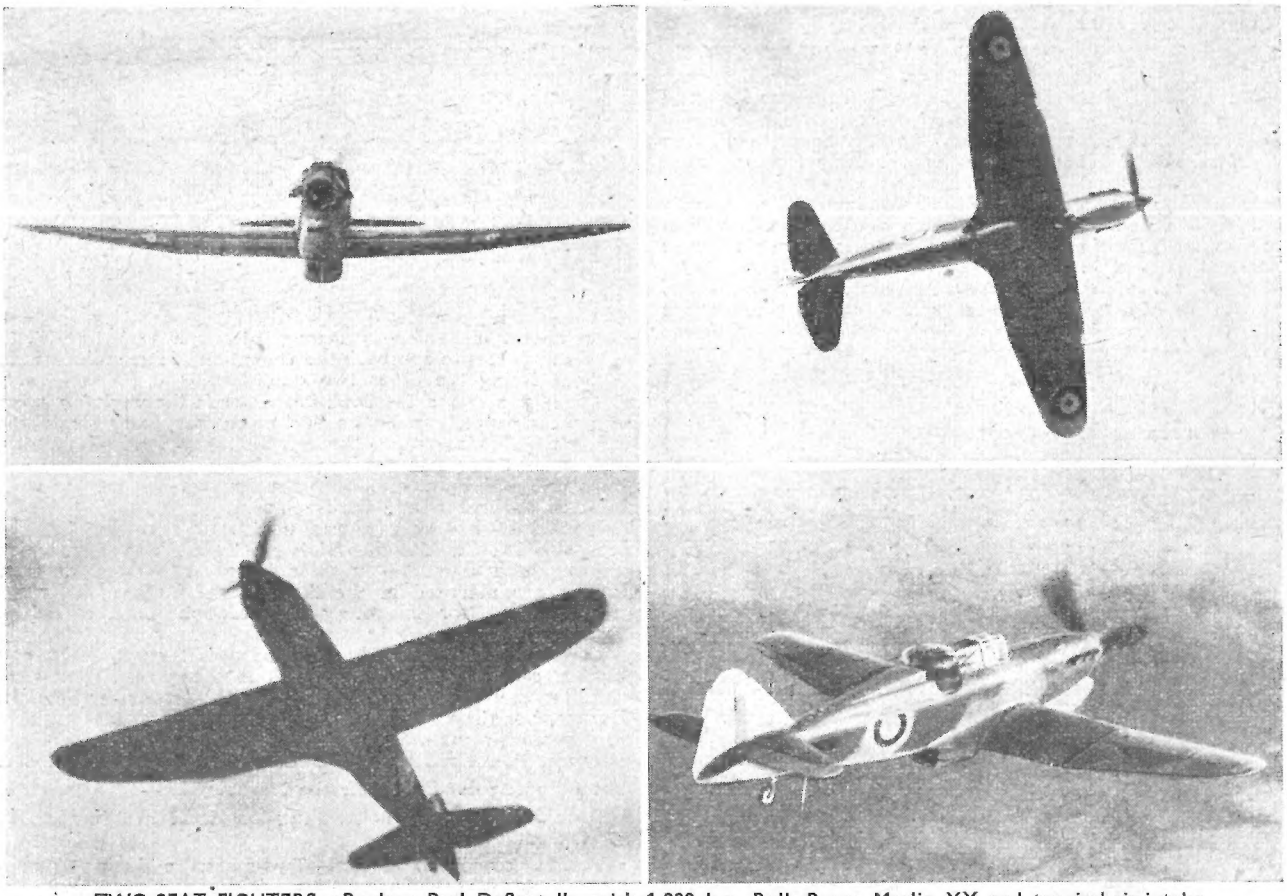
DIMENSIONS.—Span, 28 ft. 6 in.; length, 23 ft. 5 in.; wing area, 238 sq. ft.; aspect ratio, 6.8.

WEIGHTS.—Empty, 1,100 lb.; loaded, 1,750 lb.

PERFORMANCE.—Max. speed, 124 m.p.h.; initial climb, 1,000 ft. per min.; service ceiling 20,000 ft.

POINTS OF RECOGNITION.—Single bay, equal span biplane with moderate sweep back on the wings; rounded tips. Pointed nose with exposed 5-cylinder radial motor, vee undercarriage and fuselage terminating in vertical knife edge. Fin and rudder with curved leading edge and straight trailing edge, rectangular tailplane.





TWO-SEAT FIGHTERS.—Boulton Paul Defiant IIs, with 1,280 h.p. Rolls-Royce Merlin XX and tropical air-intake filters, are in service with the Royal Air Force.

LESSER KNOWN TYPES—LXII

THE BOULTON PAUL DEFIANT II

A LARGE number of Boulton Paul Defiant two-seat turret fighters are now in service with the R.A.F., although little mention of them in action has been made. They are chiefly used for night fighting, training and target towing.

The prototype first flew in 1938 and the Mark I with the 1,030 h.p. Rolls-Royce Merlin III went into production the following year. Many of this type are still flying. Later the Defiant II, with the 1,280 h.p. Merlin XX motor, was produced and is now in operational service. The tropical version of the Defiant II has a Vokes air filter mounted under the nose and may be seen flying in this country as well as in the Middle East.

Defiant Is were first mentioned in action in the fighting over Dunkirk. One squadron destroyed 38 enemy aircraft on May 29, 1940, without loss to themselves. Enemy fighter pilots mistook them for Hurricanes and attacked from behind with disastrous results for the Germans. Since then the Defiant has been used almost exclusively for night fighting, and although its achievements in action have not been spectacular, it has done much valuable night patrol work. The Defiant being a two-seat fighter with a power-operated turret, mounting an armament of four Browning .303-in. machine-guns, is specially suitable for night interception.

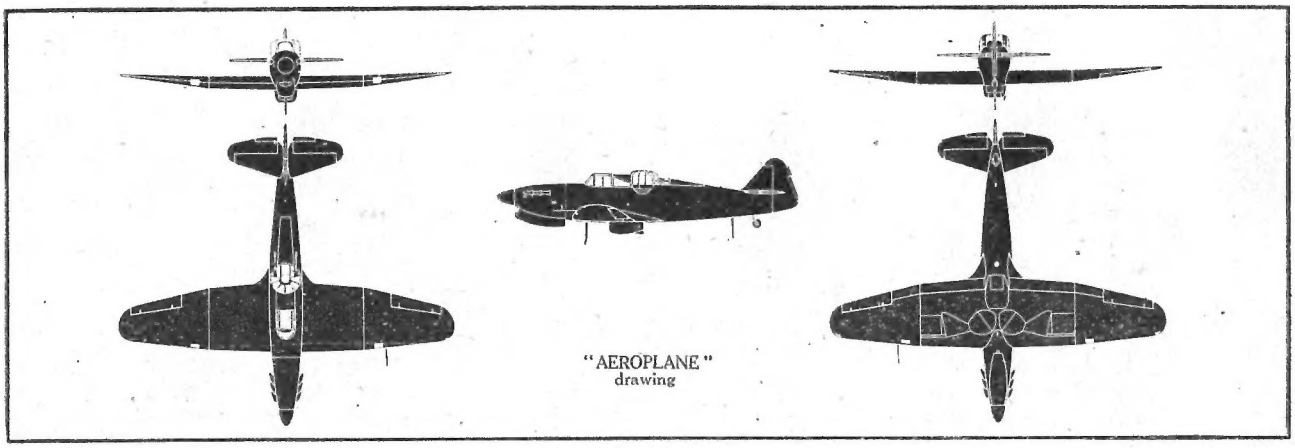
The design number of the Defiant is P.82, that is to say, it is the 82nd design since the firm started building aeroplanes in 1916 under the technical direction of Mr. J. D. North. Unlike any previous Boulton Paul design, the Defiant is of stressed-skin construction and employs an ingenious system of riveting which gives an unusually smooth finish. The following are details of the Defiant II (temperate version) :—

DIMENSIONS.—Span, 39 ft. 4 in.; length, 35 ft. 4 in.; height, 12 ft. 0 in.; wing area (gross), 250 sq. ft.; aspect ratio, 6.26.

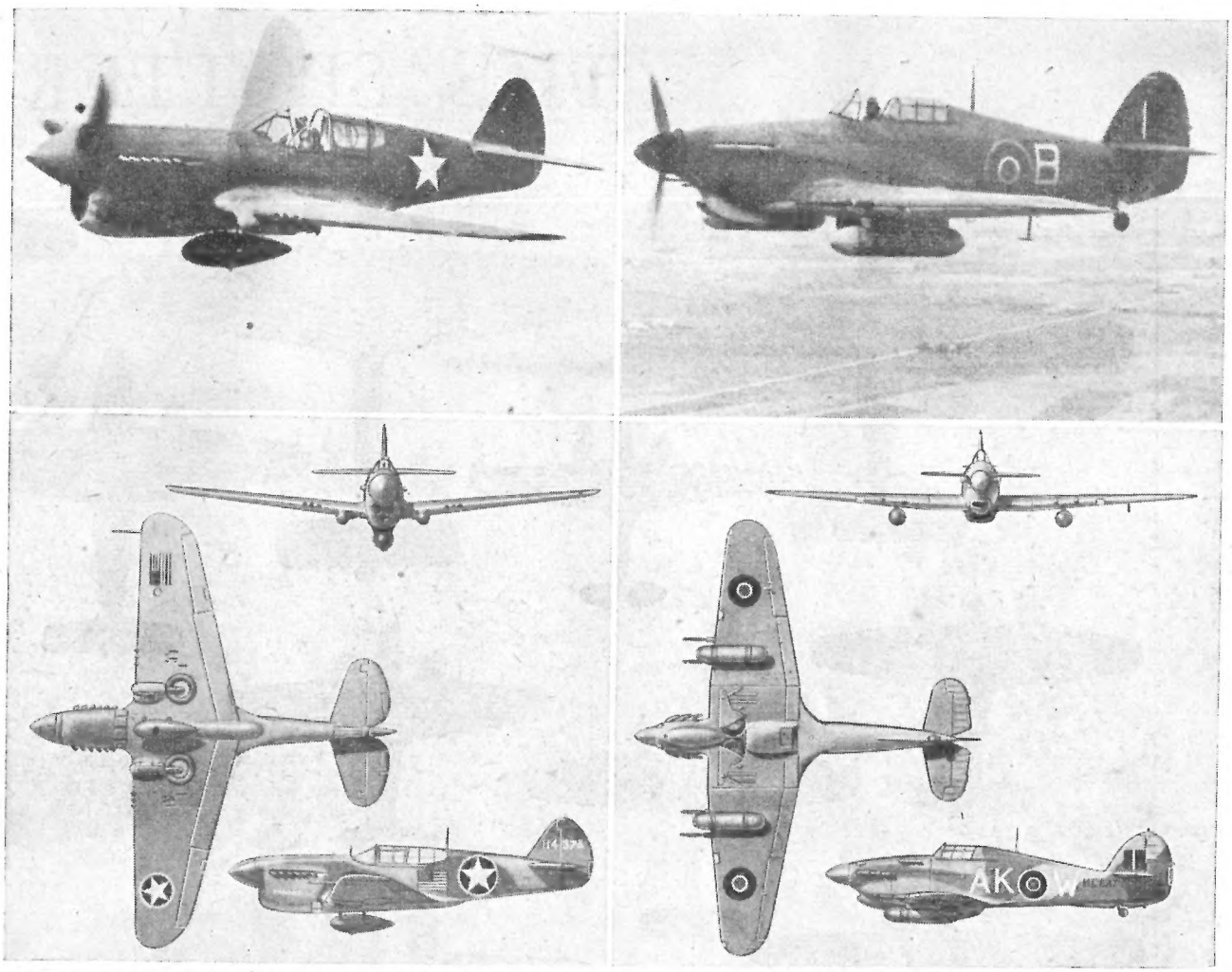
WEIGHT.—Loaded, 7,500 lb.

PERFORMANCE.—Max. speed, 314 m.p.h. at 21,500 ft.

POINTS OF RECOGNITION.—Single-motor low-wing monoplane. Almost rectangular centre section and straight-tapered outer wing panels. Rounded tips. Large air-intake filter under the nose (tropical version) and large radiator under centre section. Prominent turret faired in behind the cockpit. Triangular-shaped fin and rudder and tailplane.



"AEROPLANE" drawing



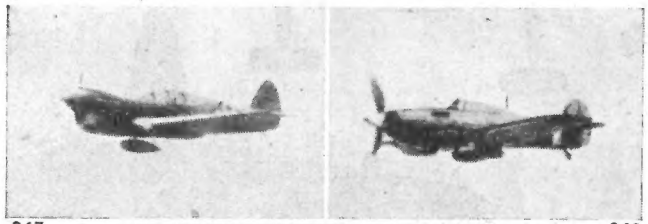
DETAILED ANALYSIS.—The points by which the subjects of the previous recognition problems can be recognised are illustrated in the photographs and drawings by W. J. Everest of the Curtiss P-40F Warhawk (left) and the Hawker Hurricane IIC (right).

Aircraft Recognition

THE Curtiss P-40F Warhawk (one 1,280 h.p. Rolls-Royce Packard Merlin 21 V-650-1 motor) and the Hawker Hurricane IIc (one 1,280 h.p. Rolls-Royce Merlin XX motor) were the subjects of the previous recognition tests. Both are single-seat fighters and are in operational service in North Africa.

The Warhawk is the first American-designed military aeroplane to be equipped with a British-designed aero-motor. It is shown here with U.S.A.A.F. colours, but it is also in service with the R.A.F., as the Kittyhawk II. The armament is six 0.500-in. machine-guns, and seen here has a long-range fuel tank under the fuselage. Alternatively it can carry a 500 lb. bomb.

Points of recognition from this angle are the deep nose with radiator intake well forward, large pointed spinner, tapered low-wing, large transparent cockpit, short tapered fuselage, rounded fin and rudder, and the well-streamlined fuel tank under the fuselage.



267 PREVIOUS PROBLEMS.—(Left) A Warhawk and (right) a Hurricane. 268

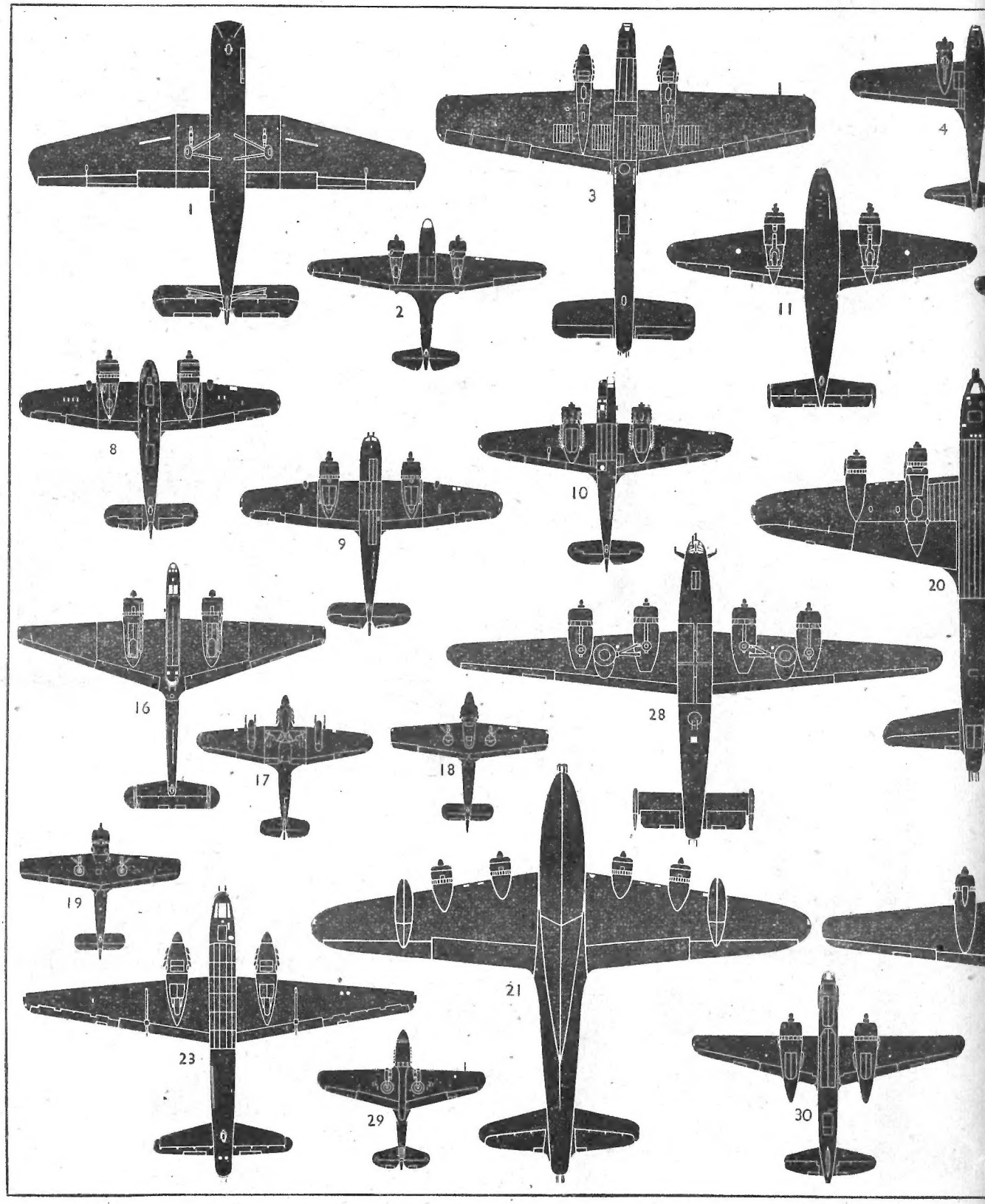
Although it is no longer widely used in the European theatre of war as an operational day fighter the Hurricane still continues to give yeoman service in North Africa in close support of the Army. The version illustrated here is the Mark IIc with the tropical air-intake filter under the nose, four 20 mm. British Hispano cannon, and two long-range fuel tanks under the wings.

In this view of the Hurricane IIc recognition points are the curved tapered nose, small cockpit with the characteristic "hump," tapered low-wing with rounded tips and the rounded fin and rudder. The excrescence under the port wing is the fuel tank merging with the radiator intake under the fuselage.

269 270

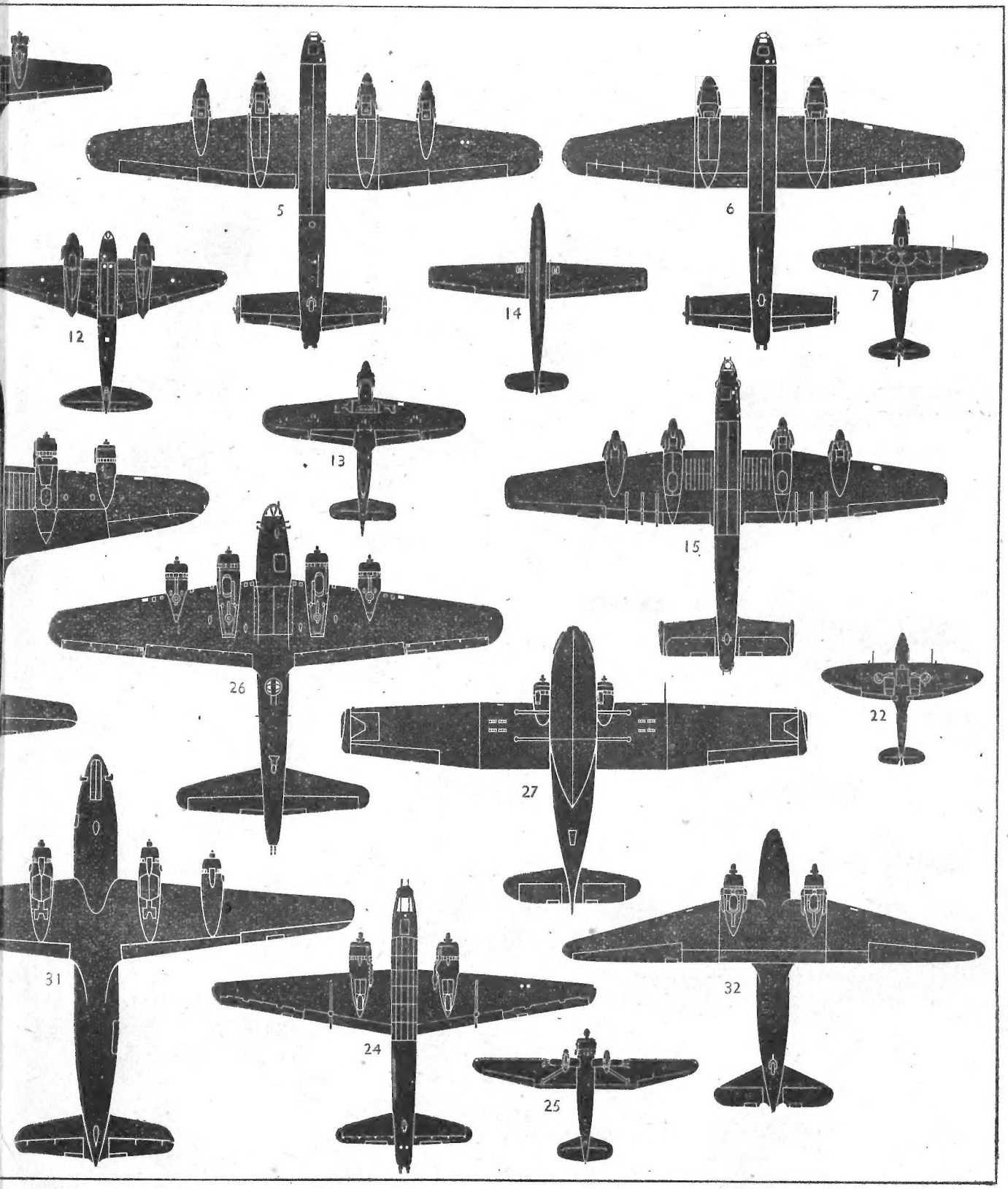
FOR IDENTIFICATION LXXXI.—Two more photographs to give practice in the recognition of Allied and enemy aeroplanes. What they are and notes on their characteristics will be published with two more photographs on April 22.

THE SPOTTER'S



HALF THE PLAN VIEWS.—Set out above, in true relative scale (smaller than the side and head-on views), are the revised pl
Third Class Test of the National Association of Spotters' Clubs. The aircraft are:—**(1)** Airspeed Horsa I; **(2)** Airspeed Oxford
Defiant I; **(8)** Bristol Beaufighter I; **(9)** Bristol Beaufort II; **(10)** Bristol Blenheim V; **(11)** de Havilland Flamingo; **(12)** de H
Hampden I; **(17)** Hawker Hurricane IIc; **(18)** Miles Master I; **(19)** Miles Master III; **(20)** Short Stirling I; **(21)** Short S
Wellington III; **(25)** Westland Lysander III; **(26)** Boeing Fortress II; **(27)** Consolidated Catalina I; **(28)** Consolidate

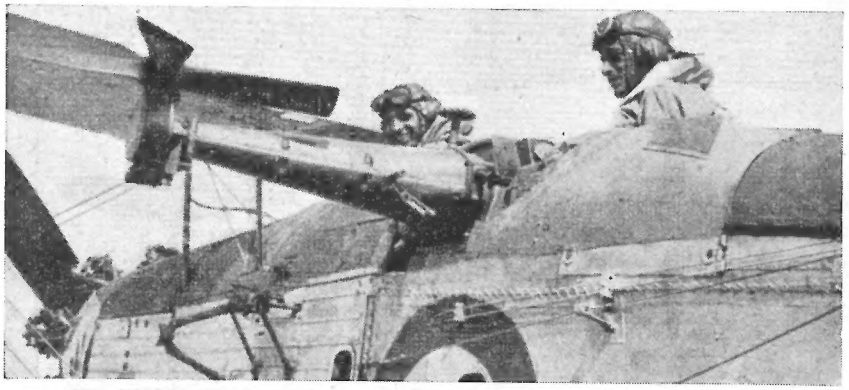
BASIC SELECTION



an view silhouettes of twenty-five British and seven American first-line aeroplanes, advanced trainers and gliders in the revised V; (3) Armstrong Whitworth Whitley V; (4) Avro Anson I; (5) Avro Lancaster I; (6) Avro Manchester IA; (7) Boulton Paul avilland Mosquito IV; (13) Fairey Fulmar I; (14) General Aircraft Hotspur III; (15) Handley Page Halifax II; (16) Handley Page underland I; (22) Vickers-Armstrongs Supermarine Spitfire IX; (23) Vickers-Armstrongs Wellington II; (24) Vickers-Armstrongs d Liberator III; (29) Curtiss Kittyhawk II; (30) Douglas Boston III; (31) Douglas Skymaster I; (32) Douglas Dakota I.

NEWS IN PHOTOGRAPHS

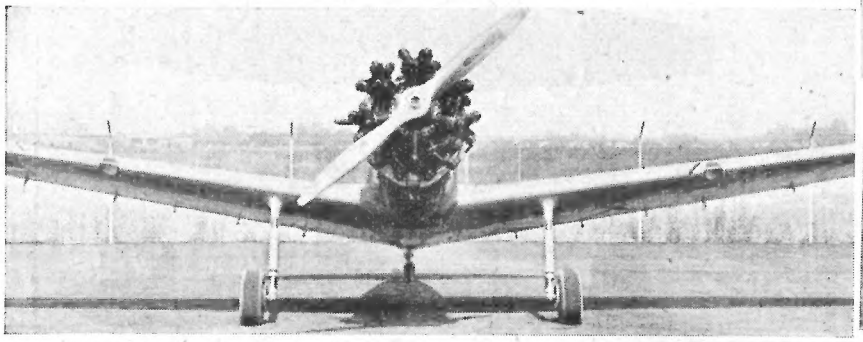
MARAUDING MANDARINS.—Chinese fighters in their first air combat of the year destroyed two Japanese fighters over Lingling on April 1.



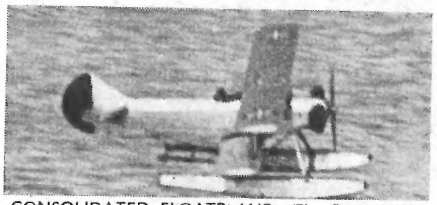
THE WORKS.—Target-towing equipment similar to this wind-driven winch on a Westland Wallace is also fitted to Defiants, Henleys and Martinets.

PORTUGUESE PATROL 'PLANE.—A number of Short Sunderland I flying-boats are in service with the Portuguese Naval Air Service.

SWEDISH DIVE BOMBER.—Svenska B-17 two-seat dive bombers of Swedish design and construction are in service with the Swedish Air Force.

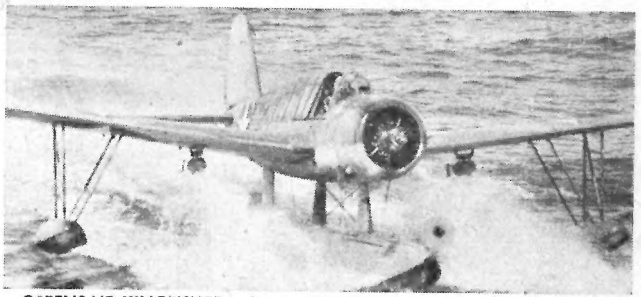


VICTORY TRAINER.—Non-essential materials are used throughout this Timm elementary trainer, large numbers of which are being built in the U.S.A. to train the aircrews of to-morrow.



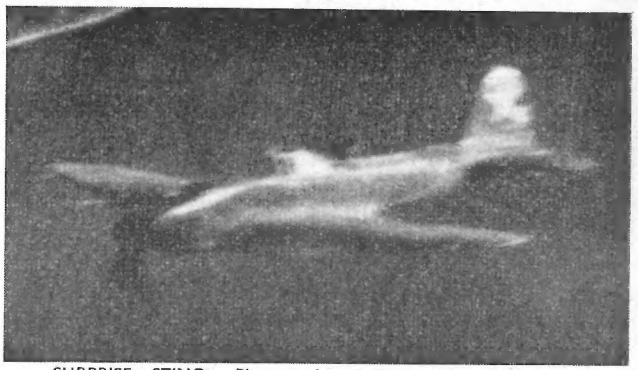
CONSOLIDATED FLOATPLANE.—The Portuguese Naval Air Service uses Consolidated "Fleet" floatplane trainers (one 125 h.p. Kinner air-cooled radial motor).

ITALIAN MAGGIE.—Numbers of Meridionali Ro 43 "Macchi" central float seaplanes are still in service with the Italian Navy.



OFFENSIVE KINGFISHER.—Curtiss Kingfisher central float seaplanes of the U.S. Navy have external racks under each wing to carry small bombs.

CARAVAN CONTEMPORARY.—A new Curtiss cargo glider, similar in many respects to the C-76 two-motor transport, is now in service with the U.S. Army.



SURPRISE STING.—Photographs of Russian Il-2 Stormovik fighter-bombers have recently revealed a gun position behind the pilot's cockpit.

THE NATIONAL ASSOCIATION OF SPOTTERS' CLUBS

GENERAL COUNCIL:

Hon. General Sec. (North): Miss M. Duncan, 10, Eden Street, Riddrie, Glasgow.

Hon. General Sec. (South): P. T. Sampson, 56, Forest Drive West, E.11.

Hon. Secs. of REGIONAL COUNCILS:

NORTHERN—T. Carver (pro tem.), Royal Grammar School, Eskdale Terrace, Newcastle-on-Tyne. NORTH-EASTERN—W. M. Sowerby, 9, Grange Park Place, Leeds. NORTH-MIDLANDS—R. R. Langley, 80, Cornwall Road, Kettering, Northants. EASTERN—J. E. Barnes, 140, Moulsham Drive, Chelmsford. LONDON—F. C. Palethorpe, 38, Bridgewater Road, Alperton, Middx. SOUTHERN—A. Marple, 16, Bridge Street, Reading. SOUTH-WESTERN—E. Griffiths, 25, Charlton Avenue, Filton, Bristol, 1. WELSH—W. H. Young, 21, Beaufort Place, St. Julians Park, Newport, Mon. MIDLAND—G. C. Matthews, 239, The Broadway, Dudley, Worcs. NORTH-WESTERN—H. Pearson, 12, Plymouth Street, Oldham. SCOTTISH—Miss M. Duncan, 10, Eden Street, Glasgow. SOUTH-EASTERN—P. Chinery, "Little Hemingfold," Battle, Sussex.

NEW SPOTTERS' CLUBS

WE HAVE RECEIVED notice of the formation of the following new Spotters' Clubs:—

No. 565.—**M.G. S.C.**—(Hon. Sec.: W. H. Lowe, A.R.P.S., P.A.D. Officer, The M.G. Car Co., Ltd., Pavlova Works, Abingdon-on-Thames.) *Southern Region (No. 6).*

No. 566.—**1484 Sqdn. A.T.C. S.C.**—(Hon. Sec.: S. J. A. Holding, 165, London Road, Waterlooville, Portsmouth.) *Southern Region (No. 6).*

No. 567.—**2061 "Idris" Flight, A.T.C. Sqdn. S.C.**—(Hon. Sec.: G. E. James, "Hen Efail," Dolgeiley, Merioneth, N. Wales.) *North Western Region (No. 10).*

No. 568.—**No. 420 Sqdn. A.T.C.**—(Hon. Sec.: J. A. L. Park, 84, St. Andrew's Road, Bridport.) *Southern Region (No. 6).*

No. 569.—**Taunton School S.C.**—(Hon. Sec.: R. Ditcham, 18, Northbourne Avenue, Winton, Bournemouth.) *Southern Region (No. 6).*

No. 570.—**Rose Hill School S.C.**—(Hon. Sec.: H. Forbes, c/o Rose Hill School, London Road, Tunbridge Wells.) *South Eastern Region (No. 12).*

No. 571.—**No. 1987 Sqdn. A.T.C. S.C.**—(Hon. Sec.: Sgt. I. Mackenzie, 67, Wellington Hill West, Henleaze.) *South Western Region (No. 7).*

No. 572.—**Barnstaple Boys Grammar School S.C.**—(Hon. Sec.: D. Morrell, "Anchorway," Oakland Park Estate, Barnstaple.) *South Western Region (No. 7).*

No. 573.—**Welwyn Garden City County School S.C.**—(Hon. Sec.: A. P. Rouse, The County School, Welwyn Garden City.) *Eastern Region (No. 4).*

No. 574.—**Spondon and District Inter-Services S.C.**—(Hon. Sec.: G. Stevens, 24, Huntley Avenue, Spondon.) *North Midland Region (No. 3).*

No. 575.—**Flore S.C.**—(Hon. Sec.: J. S. Arnos, Sefton Street, Flore, Northampton.) *North Midland Region (No. 3).*

No. 576.—**No. 1875 Sqdn. A.T.C. S.C.**—(Hon. Sec.: Cadet G. H. Gowing, 1, South Place, Daventry.) *North Midland Region (No. 3).*

No. 577.—**Loughborough Industrial S.C.**—(Hon. Sec.: W. Storer, Shepshed Lace Manufacturing Co., Ltd., Loughborough.) *North Midland Region (No. 3).*

CHANGES IN CLUB SECRETARIES

THE FOLLOWING are the names and addresses of new Hon. Secs. of Clubs. They replace those previously published:—

No. 12.—**Blackfriars S.C.**—(Hon. Sec.: F. Holford, c/o Times, Ltd., Printing House Yard, Blackfriars, E.C.4.)

No. 25.—**Radley S.C.**—(Hon. Sec.: J. H. A. Speir, Radley College, Abingdon, Berks.)

No. 119.—**Retford Raid S.C.**—(Hon. Sec.: E. W. Woods, 32 Winston Green, Mattersey Thorpe, near Doncaster.)

No. 146.—**G.E.C. (Witton).**—(Hon. Sec.: E. A. Millward, Switch Ratefixing Dept., Switchworks, G.E. Co., Ltd., Witton, Birmingham, 6.)

No. 186.—**Archbishop Holgates Grammar School.**—(Hon. Sec.: Peter Haywood, 24, Trentholme Drive, The Mount, York.)

No. 221.—**Wycliffe College S.C.**—(Hon. Sec.: J. Jenkins, "Haywardsfield," Wycliffe College, Lampeter, Cardiganshire.)

No. 290.—**Peter Symonds School.**—(Hon. Sec.: P. R. Matthew, Beech Croft, King's Somborne, Stockbridge, Hants.)

No. 331.—**Ratcliff College S.C.**—(Hon. Sec.: H. Johnson, c/o Ratcliff College, Leicester.)

No. 338.—**Southern Cross S.C.**—(Hon. Sec.: O. Hart, 32, St. Leonards Road, Hove 3, Sussex.)

No. 352.—**No. 323 Epsom and Ewell A.T.C.**—(Hon. Sec.: A. W. Lewis, County School, Hessle Grove, Ewell.)

No. 420.—**No. 1411 A.T.C. Sqdn. (Amersham and Chesham).**—(Hon. Sec.: J. Flinn, "Fieldside," Stanley Hill Avenue, Amersham, Bucks.)

No. 473.—**University College (Southampton) S.C.**—(Hon. Sec.: Mr. Oakleigh, Connaught Hall, Swaythling, Southampton.)

EXECUTIVE COMMITTEE MEETING

THE THIRTEENTH MEETING of the Executive Committee of the General Council took place in London on March 30 at 18.00 hrs. Mr. S. F. Sabin was in the chair.

The minutes of the twelfth meeting were passed and the members of the committee reported on the actions they had taken as a result of that meeting. An account had been received from the ex-librarian, and the blocks for the Third Class Test Cards were almost ready. Mr. Sabin had seen a printer to arrange for the publication of the pamphlet entitled "The National Association of Spotters' Clubs" and he informed the Committee that Notes for Regional Hon. Secretaries No. 5 had been circulated with a proposed standard syllabus for Club Training Officers.

A report from Mr. C. F. Andrews, the Hon. Assistant Organising Secretary of the N.A.S.C., was considered, particularly in reference to the present stocks of Lapel Badges, Helmet Transfers, Membership Cards, and Raid Spotters' Notebooks.

Mr. Sabin reported on the issue of aircraft recognition folders to the Raid Spotter section of the N.A.S.C.

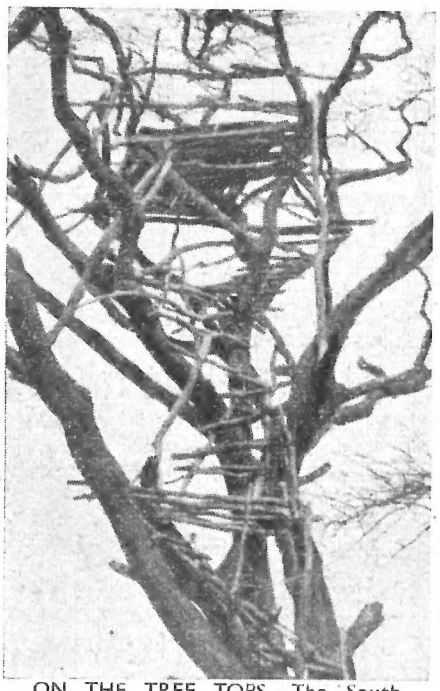
Under any other business progress was reported in clearing up the Lone Spotters' Club and a discussion took place on the Annual General Meeting to be held in July. Mr. F. C. Palethorpe was nominated as the N.A.S.C.'s delegate to the next conference of Regional Raid Spotting Officers, and Mr. Murray intimated that he was making progress in the compilation of a First Class Test and notes for Club Training Officers and Club Competitions Officers.

N.A.S.C. PUBLICATIONS

STOCKS of Helmet Transfers and Membership Cards have now been exhausted, but it is hoped that the shortage of Membership Cards will be only temporary and of short duration.

Lapel Badges and blue prints of a "Hunt" trainer are still available at 1s. 6d. and 2s. 6d. each respectively, while further supplies of Raid Spotters' Notebooks (2s. 3d. each) have now been received.

Club Hon. Secretaries can obtain Lapel Badges and blue prints through their Regional Hon. Secretaries, and Raid Spotters' Notebooks from Mr. C. F. Andrews, "Orchard Lea," Lower Knaphill, Woking, Surrey. All letters to Mr. Andrews should be marked "N.A.S.C. Library."



ON THE TREE TOPS.—The South African contingent in East Africa has constructed many "Aircraft Lookout Platforms" similar to this one built high in a tree in Kenya.

CLUB ANNUAL GENERAL MEETINGS

ALL CLUBS are reminded that their Annual General Meetings must take place during the month of May. The business to be transacted at the Annual General Meetings of Clubs in the N.A.S.C. is laid down by Rule No. 16 of the Constitution:—

The business to be transacted by the Annual General Meeting of a club shall include:—

(1) Considering the Report and Accounts for the year.

(2) Electing the Officers and Committees for the ensuing year.

(3) Nominating a delegate to attend the next Annual General Meeting of the National Association of Spotters' Clubs.

(4) Nominating a delegate to represent the Club upon the Regional Council of the Region in which it is situate.

(5) Considering any matters which it is desired should be discussed at the Annual General Meeting of the National Association of Spotters' Clubs.

FORTHCOMING EVENTS

April 8

Harrow.—Kodak Social Centre.—19.30 hrs.—(S.C. 75.)
Westminster.—Thorneycroft House.—18.00 hrs.—(S.C. 142.)
Guildford.—County Technical College, Stoke Park.—19.30 hrs.—(S.C. 150.)
Seaham.—Rock House.—18.30 hrs.—(S.C. 230.)
Battersea Men's Institute, Latchmere Rd. S.W.11.—19.45 hrs.—(S.C. 483.)
Beaconsfield.—Council Hall.—(S.C. 556.)

April 9

N. Birmingham.—No. 11, Poppy Lane.—19.30 hrs.—(S.C. 15.)
London.—North Western Polytechnic, Prince of Wales Rd., N.W.5.—(S.C. 16.)
Sunderland.—Town Hall.—19.30 hrs.—(S.C. 37.)
Hoddesdon.—Clock House.—19.30 hrs.—(S.C. 128.)
Preston.—Central Police Station.—19.30 hrs.—(S.C. 249.)
Croydon.—Fairfield Training Centre, The Car Park, Park Lane.—18.45 hrs.—(S.C. 404.)
Downham.—Community Centre, Castillon Road.—19.30 hrs.—(S.C. 454.)

April 12

Hendon.—Technical College.—19.30 hrs.—(S.C. 124.)
Wigan.—Town Hall.—19.15 hrs.—(S.C. 266.)

April 13

London.—Meeting of Executive Committee of General Council.—Bowling Green Lane, E.C.1.—18.00 hrs.
Southend.—A.R.P. Hdqrs., 120, Victoria Avenue.—19.00 hrs.—(S.C. 1.)
Stoke-on-Trent.—Lecture Hall, Back Glebe St.—17.00 hrs.—(S.C. 60.)
London.—Northern Polytechnic, Holloway Rd., N.7.—19.00 hrs.—(S.C. 156.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)

April 14

Hastings.—White Rock Pavilion.—19.30 hrs.—(S.C. 47.)
Rickmansworth.—No. 112, High Street.—19.30 hrs.—(S.C. 81.)
Walton-on-Thames.—Anglo-Iranian Oil Co., Ltd., New Zealand Av.—(S.C. 96.)
Dudley.—Hen and Chickens Inn.—19.15 hrs.—(S.C. 115.)
Sheffield.—Geo. Senior and Sons, Ltd, Ponds Forge, Sheaf St.—19.00 hrs.—(S.C. 178.)
Haywards Heath.—172 Sqdn. A.T.C. Hdqrs., Oathall Rd.—19.30 hrs.—(S.C. 252.)

April 15

Harrow.—Kodak Social Centre.—19.30 hrs.—(S.C. 75.)
Guildford.—County Technical College, Stoke Park.—19.30 hrs.—(S.C. 150.)
Seaham.—Rock House.—18.30 hrs.—(S.C. 230.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)
Battersea Men's Institute, Latchmere Rd., S.W.11.—19.45 hrs.—(S.C. 483.)

April 16

Hoddesdon.—Clock House.—19.30 hrs.—(S.C. 128.)
Leeds.—College of Technology, Albert Hall, Cookridge Street.—18.30 hrs.—(S.C. 148.)
Stapleford.—Constitutional Club.—19.00 hrs.—(S.C. 159.)
Preston.—Central Police Station.—19.30 hrs.—(S.C. 249.)
Croydon.—Fairfield Training Centre, The Car Park, Park Lane.—18.45 hrs.—(S.C. 404.)

April 19

Beckenham.—Bromley Road School.—19.30 hrs.—(S.C. 110.)
Wigan.—Town Hall.—19.15 hrs.—(S.C. 266.)
Appleby.—Grammar School.—14.00 hrs.—(S.C. 411.)

April 20

London.—Northern Polytechnic, Holloway Rd., N.7.—19.00 hrs.—(S.C. 156.)
Crosby.—St. Mary's College.—19.00 hrs.—(S.C. 320.)

April 21

Sunderland.—Sons of Temperance Room, Norfolk St.—19.30 hrs.—S.C. 37.)
Belfast.—45, Howard St.—(S.C. 151.)
Sheffield.—Geo. Senior and Sons, Ltd., Ponds Forge, Sheaf St.—19.00 hrs.—(S.C. 178.)

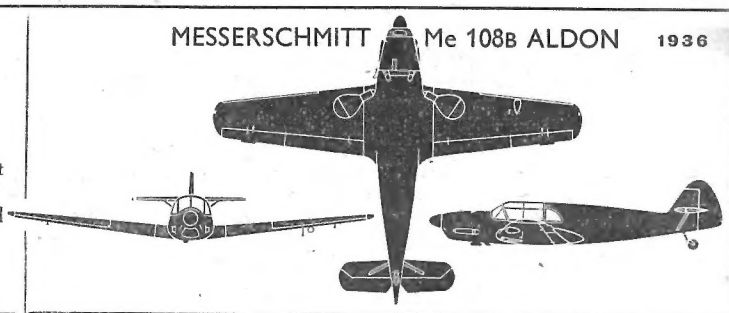
April 22

Harrow.—Kodak Social Centre.—19.30 hrs.—(S.C. 75.)
Westminster.—Thorneycroft House.—18.00 hrs.—(S.C. 142.)

AIRCRAFT COMPARISONS—LXXXI

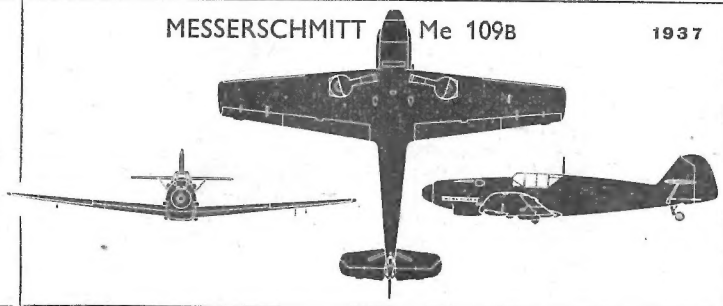
MESSERSCHMITT MODE

MESSERSCHMITT Me 108B ALDON 1936



SPAN: 34 ft. 5 in.
LENGTH: 27 ft. 2 in.
HEIGHT: 7 ft. 6½ in.
MAX. SPEED: 187 m.p.h. at 1,000 ft.
One Argus As 10E inverted Vee motor, 270 h.p.

MESSERSCHMITT Me 109B 1937

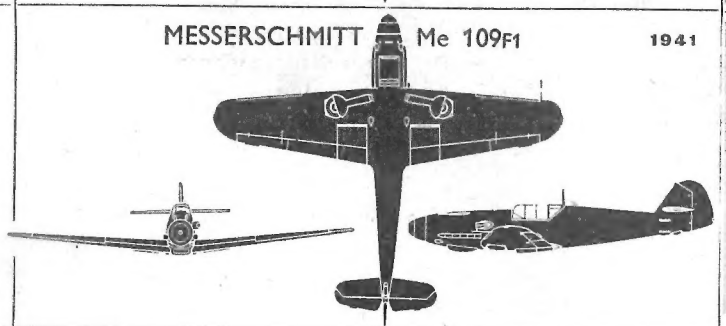


SPAN: 30 ft. 3 in.
LENGTH: 25 ft. 6 in.
HEIGHT: 7 ft. 5½ in.
MAX. SPEED: 292 m.p.h. at 8,850 ft.
Junkers Jumo 210 Inverted-Vee motor, 610 h.p.

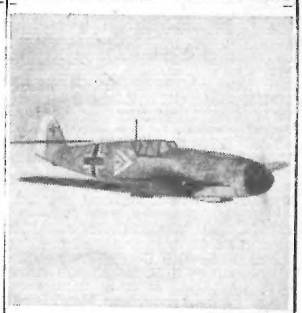
MESSERSCHMITT Me 109E 1939

SPAN: 32 ft. 3 in.
LENGTH: 28 ft. 8 in.
HEIGHT: 7 ft. 6 in.
MAX. SPEED: 354 m.p.h. at 14,760 ft.
One Mercedes-Benz DB 601A Inverted-Vee motor, 1,100 h.p.

MESSERSCHMITT Me 109F1 1941



SPAN: 32 ft. 8½ in.
LENGTH: 29 ft. 8 in.
HEIGHT: 7 ft. 6 in.
MAX. SPEED: 371 m.p.h. at 22,000 ft.
One Mercedes-Benz DB 601N Inverted-Vee motor, 1,150 h.p.



MESSERSCHMITT Me 109G 1942

SPAN: 32 ft. 8½ in.
LENGTH: 29 ft. 8 in.
HEIGHT: 7 ft. 6 in.
MAX. SPEED: 390 m.p.h. approx.
One Mercedes-Benz DB 605 Inverted-Vee motor, 1,500 h.p. approx.

(No photograph available).

SEVEN YEARS' EVOLUTION.—The famous Messerschmitt Me 109 single-seat fighters have descended from the Me 108A communications monoplane (one 160 h.p.) Siemens Sh 14A radial motor. Although many are still flying, the Me 108A was replaced in production by the Me 108B. This was called Taifun in Germany and Aldon here. It has an in-line motor, giving it a characteristic shape which was continued in the Bf 109 fighter of 1935. The Me 109B, armed with one cannon and two machine-guns, was produced in 1936 from the Bayerische Flugzeugwerke Bf 109, powered with a Jumo 210 motor. Later the Me 109E had a Mercedes-Benz DB 600 motor of 950 h.p., which improved the previous low performance. The Me 109E was a major modification with the DB 601A motor. Two wing cannon replaced the engine-mounted cannon of the Me 109B and the radiators are placed under the wings to balance the increased engine weight in the nose. An aerodynamic clean-up resulted in the new Me 109F, which returned to the armament arrangement of the Me 109B. The latest of the series, Me 109G, is outwardly similar to the Me 109F but has the new DB 605 motor. One version of the Me 109G has the same armament as the Me 109F plus two Mauser 20 mm cannon in the wings. Some versions of this aeroplane are fitted with pressure cabins. An interesting aeroplane not illustrated above is the special speed Me 109R, which holds the World's Absolute Speed Record of 481.4 m.p.h.

CORRESPONDENCE

["Aeroplane" photograph

The Westland-Hill Pterodactyl V.

FANCY FIGHTERS

AFTER READING B. T. Coudon's letter about the lack of gen on the Ju 88B I made a few inquiries at a fairly reliable source of information. The following is all the gen I could get on this aeroplane; will you please tell me if it is correct and if it differs from the Ju 88A6 in any other way? It is a night fighter version of the A6. It is fitted with Jumo 211D motors of 1,200 h.p. which give it a top speed of 320 m.p.h. Its armament consists of a combination of cannon and machine-guns fitted in an opaque nose. Span, 60 ft. 3½ in.; length, 49 ft. 2 in.

Could you please tell me if the Westland Pterodactyl V was built and flown in this country. If it was, what was its top speed and was it developed as a war aeroplane? N. E. GROVER.

[We published the above details of the Ju 88B in THE AEROPLANE on Jan. 9, 1942, and an illustration in THE AEROPLANE SPOTTER on Jan. 15, 1942. The "reliable source" probably reads both!

The Westland-Hill Pterodactyl V two-seat fighter flew well. Its design was largely the work of Prof. Geoffrey Hill. The top speed with a Rolls-Royce Condor motor was about 180 m.p.h. An excellent point about the design was the complete hemisphere of fire open to the rear gunner. Only one was built.—ED.]

SPANISH CIVIL WAR TYPES

FROM time to time one reads of German airmen who went to Spain with the Condor Legion. Several German aircraft have been mentioned, but the names and types on both sides have been vague. Could you, if possible, let me have a list of aircraft which flew on both sides? J. WASHBOURNE.

[The following are some of the chief types used by the Franco and Republican forces in the Spanish Civil War, July 18, 1936, to March 29, 1939:—

Franco	Republican
Arado Ar 68	Airspeed Oxford
BFW Bf 109 (later developed into the Me 109)	Breguet 39-T
Bucker Jungmann	Curtiss P-26
Bucker Jungmeister	Dénconviedo
Caproni Ca 30	Delfine
Dornier Do 17	Dewoitine D.371
Dornier Do 17P	Dewoitine D.510
Fairey Fantome (few)	Dornier Wal
Faix	Dragon Rapide
Fiat C.R.32 bis	Hawker Fury (few)
Fiat C.R.42	Hispano Suiza E.30
Heinkel He 51	I-15 Chato
Heinkel He 59	I-16B Rata
Heinkel He 70	Loring R-3
Heinkel He 111K2	Martin 139
Heinkel He 112	Miles Hawk
Henschel Hs 123	Natacha
Junkers Ju52/3mK	Nieuport 160 C.1
Junkers Ju 52/3mE	Osprey
Junkers Ju 86	Potez 54
Junkers Ju 87A	Prago Pavo
Junkers Ju 87B	Savoia Marchetti S.M.55
Junkers Ju 89	SB-1 (Katucha)
Me 109B/109C	SB-2
S.M.79/81	SB-3

—ED.]

AMERICAN TRANSPORTS

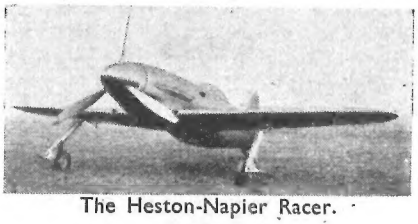
I NOTICE that in the issue for July 2, 1942, you state that the Douglas DC-5 is used by the U.S. Navy as a utility transport and the U.S. Marines for training parachute troops, being known as the R3D-2 and the R5D-1. In the issue for Feb. 25, 1943, I observed that in the table given on the front page the R5D-1 is given as being the U.S. Navy version of the Douglas Skymaster, the DC-4A. Could you please explain which is correct.

J. SOUTHCOMBE.

[The following is the correct designation of the various transports in service with both the U.S. Army and the U.S. Navy:—

U.S. ARMY NO.	U.S. NAVY NO.	U.S. SERVICE NAME	MAKER'S NO.
C-46	R5C-1	Commando	CW-20
C-53	R4D-1	Skytrooper	DC-3A
C-54	R5D-1	Skymaster	DC-4A
—	R3D-2	—	DC-5
C-56	R5O-4	Lodestar	L-18

We regret that in July the number R5D-1 was given to the DC-5 in error. Thanks for the correction. Only a few R3D-2s are now in service and production is concentrated at the Douglas factories on the Skytrainer, Skytrooper and Skymaster as well as on such bombers as the Boeing Fortress (built under licence) and the Boston.—ED.]



The Heston-Napier Racer.

MODERN AIR HISTORY

COULD YOU tell me please what has become of the Saro Lerwick? We used to hear quite a lot of this flying-boat, powered by the Bristol Hercules aero-engine, but nowadays it is never mentioned.

The photograph of the Heston Racer was very interesting and throws some light on an advertisement page which appeared in THE AEROPLANE several times within the space of a few weeks in early 1941. It was entitled simply "Napier Motors," and depicted a very "racy" looking monoplane in a high-speed dive. B. WALKER, A.T.C.

[The Lerwick was not entirely successful and is no longer used. The Heston Racer indeed inspired those Napier advertisements which were assumed by both American and German aeronautical publications to refer to the Typhoon and reprinted as such.—ED.]

UP THE GARDEN

ON READING a copy of "P.M.," an American magazine, I came across a full-size page of aircraft, among which were the Me 119 and the Typhoon. I have had all issues of THE AEROPLANE SPOTTER but have never seen anything about the Me 119. From the drawing I have it is twin-engined, with twin fins and rudders, and looks a fast machine; it carries a crew of two and is described as "may be the Reich's most important new plane." Was it ever put in production? The Typhoon's speed is given as in excess of 425 m.p.h. This magazine is over 12 months old and yet has details and drawings of the most up-to-date aeroplane. How is it that drawings of the Typhoon can appear in such a magazine and yet THE AEROPLANE SPOTTER cannot print them yet?

F. DAVIES (S.C. 60).

[There is no such aeroplane as the Me 119, which would be, if anything, a Heinkel number. The letter headed "Modern Air History" on this page may give a clue to P.M.'s "Typhoon." Both these examples are dreadful warnings against making definite statements without checking the facts.—ED.]

SCYLLA, FIATS AND WACO

COULD you please tell me what has become of the Short Scylla class air liners which used to be so frequent at Croydon when I lived there, and also what type of Fiat was that twin-engined machine which Italy used to run on the Summer services? Also can you tell me what single motor light biplanes there are with tricycle undercarriages, as I saw one at Croydon just after the start of the War? It was painted yellow.

J. FLYNN.

[Only two Short four-motor transport biplane landplanes were built, named "Scylla" and "Syriax." The "Scylla" was destroyed in a crash at Brussels, when it was blown over by the wind. The Italian two-motor monoplanes on the Croydon-Venice service, which began in May, 1938, were Fiat G-12Vs. The tricycle biplane seen at Croydon was undoubtedly a Waco Model N, one of which was used for experimental work.—ED.]

AIRACOBRA BOMBERS

IN a recent issue of the "Daily Mail" I came across a statement: Airacobras *escorted* by Spitfires had made attacks on road transport.

What extra value would be obtained by using 10 Airacobras and 10 Spitfires than 20 Spitfires? If Airacobras have to be escorted to their targets it cannot say much for the machine.

A. M. DEALEY, A.T.C.

[The Airacobras mentioned were probably carrying a 500 lb. bomb each slung under the fuselage in the place sometimes occupied by the long-range fuel tank. The Airacobras could then concentrate on the low strafing while the Spitfires maintained top cover and ensure that the low-flying machines could not be pounced on by enemy fighters. This is normal practice with any ground-strafing aeroplane and enables its pilot to devote his whole attention to the road targets without having to worry about air opposition.—ED.]

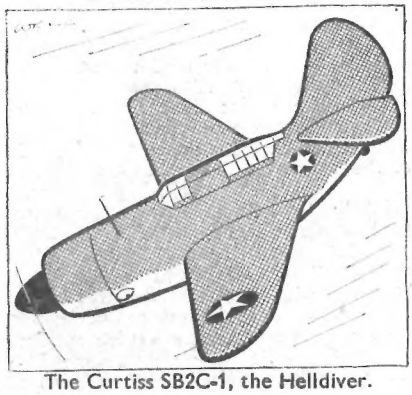
The Airacobra with externally slung long-range tank.

FAMOUS AIRCRAFT—VIII

THE PERCIVAL-HENSHAW-CROSS MEW GULL—1938

IN 1936 Percival Aircraft, founded by Capt. Edgar Percival, an Australian-born aero engineer, produced the Mew Gull as a single-seat faster design to follow the Percival Vega Gull, a light low-wing monoplane with a fine record in sporting flying. Mew Gulls accomplished many fast flights and were successful in many air races. The King's Cup of 1938 was won by Alex Henshaw in a specially "hotted-up" version at 236.25 m.p.h. The modifications were carried out by Essex Aero, Ltd., under the direction of Jack Cross. Henshaw and Cross took the machine in hand after the race for further alteration for an attack on the England—Cape record. Henshaw took off from Gravesend on Feb. 5, 1939, and after several stops arrived at Cape Town in a total time of 39 hrs. 25 mins., which for the 6,030 odd miles worked out at an average speed of 154 m.p.h. After a day's rest Henshaw started on the return journey, which he accomplished in 39 hrs. 34 mins.—astonishingly close to that of his outward time. The return average was 153 m.p.h. In such a cramped cockpit on so tiny a machine Henshaw's achievement must always rank as one of the outstanding feats of human endurance. Full credit must be given to the aeroplane itself and to the 205 h.p. D.H. Gipsy Six, Series II motor which drove a D.H. constant-speed airscrew. The enlarged fuel capacity was 87 Imp. galls., sufficient for a range of 2,000 miles at a cruising speed of 225 m.p.h. The span was 24 ft., and the over-load weight was 2,350 lb. The maximum speed of this machine (G-AEXF) varied greatly during its career, but the King's Cup version with the Gipsy Six R (racing) motor, one of those produced for the England—Australia race, was credited as having a maximum speed of 256 m.p.h.

ODDENTIFICATION—CII



The Curtiss SB2C-1, the Helldiver.

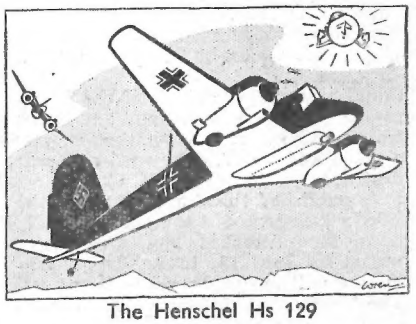
DO YOU KNOW?—LII

1. Two American aeroplanes in service in this country with four-bladed Curtiss airscrews?
2. A single-seat fighter equipped with Fowler flaps, i.e., flaps which slide behind mainplane when lowered?
3. The difference between the Russian DB-3 and DB-3F?
4. In what year the Jap OB-01 was designed?
5. The British name of the Grumman Avenger?
6. Two twin-engined torpedo droppers used by Coastal Command?
7. What German firms produce aeroplanes with the following numbers: 242, 177, 323, 58?
8. How many Mauser cannon are fitted to the Focke-Wulf 190A3?
9. Two German aeroplanes equipped with French motors.
10. The names of the D.H.98 and D.H.88?

ANSWERS TO "DO YOU KNOW?"—LI

1. Two Pratt and Whitney Wasp Junior R-985-SB2 radials.
2. The Armstrong Whitworth AW 23.
3. The Percival Q6 Petrel. 4. Kittyhawk II.
5. Eight .303 machine-guns.
6. Messerschmitt Me 109R.
7. Vickers-Armstrongs Supermarine Walrus.
8. (i) Junkers Ju 88; (ii) Heinkel He 177.
9. (i) Four .303 machine-guns in nose blisters; (ii) Twelve .303 machine-guns in nose.
10. The Jap He 111 has radial motors.

ODDENTIFICATION—CIII



The Henschel Hs 129

THE SPOTTERS' GLOSSARY OF AERONAUTICAL TERMS

TURN INDICATOR.—A gyroscopic instrument which registers the deviation of the course of an aeroplane to right or left.

TURRET.—The transparent enclosed position of the gunner of a military aeroplane. Most turrets are now power operated, hydraulically, electrically, and both.

TWO-STROKE.—The cycle of operations of an internal-combustion engine which has a power stroke in each cylinder for every revolution of the crankshaft.

TYPE.—Every new design of aeroplane now has a distinctive type name or number. Many different systems of naming and numbering new types exist.

TYPHOON.—A cyclonic depression in the China Seas, similar to a hurricane or cyclone.

UNDERCARRIAGE. — The main alighting gear of an aeroplane or floatplane. Modern undercarriages are usually retractable to reduce drag.

UNDER WAY.—A nautical term adapted to aviation to indicate that an aircraft is gathering or losing momentum immediately before or after flight.

UNSTICK.—The separation of a seaplane from the water at the end of its take-off run. Sometimes applied to the take-off of a landplane.

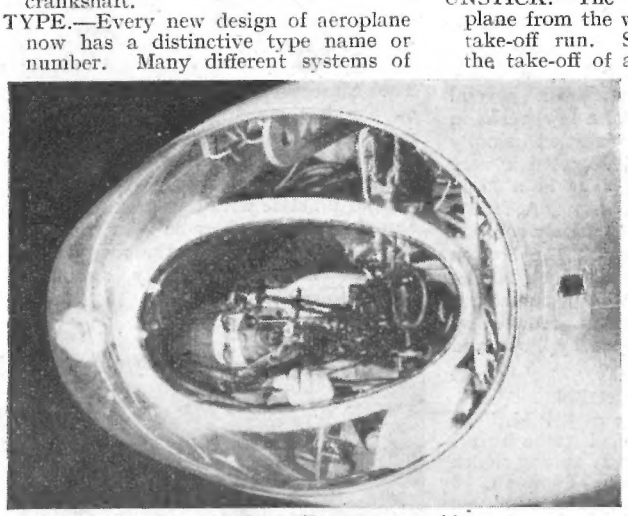
USEFUL LOAD.—The total weight of the crew, fuel, oil and payload of an aeroplane. A preferable term is "disposable load."

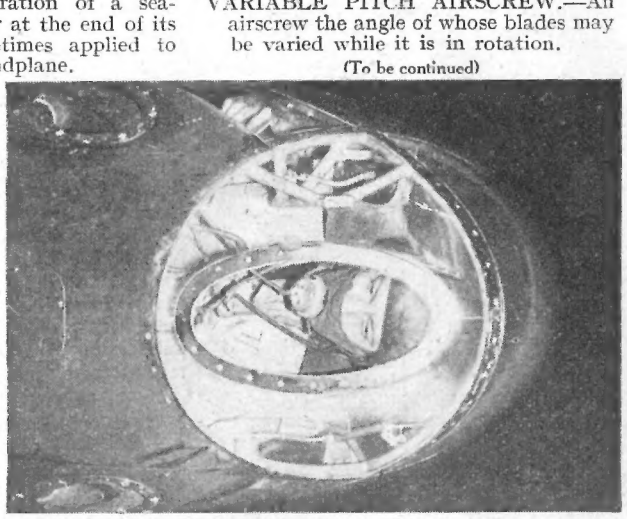
VALVE.—A mechanism which can be opened or closed to permit or restrict the passage of a fluid or gas through an orifice.

VARIABLE DATUM BOOST CONTROL.—An automatic boost control which varies progressively with the opening or closing of the throttle of an aero-motor.

VARIABLE PITCH AIRSCREW.—An airscrew the angle of whose blades may be varied while it is in rotation.

(To be continued)





WHERE AND WHAT ?—Two more problems to test your knowledge. Last fortnight's problems were (left) the starboard inner motor of a Boeing B-17F, Fortress II and (right) the starboard motors of a Consolidated PB2Y-3 Coronado.

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